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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/612,232 | 07/02/2003 | Philip M. O'Larey | TWC-2026 | 4862 |

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EXAMINER

LIN, ING HOUR

ART UNIT PAPER NUMBER

1725

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,232

Applicant(s)

O'LAREY ET AL.

Examiner

Ing-Hour Lin

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0629.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 12 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 12, line 1, "the deforming" lacks antecedent basis. In claim 26, the claimed is unclear because the claimed scope is redundant to claim 25.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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5. Claims 1-7, 9, 11 and 13-20 and 22-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Douglass in view of Verhoeven et al.

Douglass (col. 2, lines 7+) teaches the claimed method for producing metal fibers, comprising: forming a composite by impregnating a compacted and sintered refractory fiber metal including niobium metal with molten copper; elongating the composite to form bulk matrix with shape of rod containing niobium fibers; rolling and deforming the rod to form a sheet containing deformed niobium fiber in the copper matrix; and leaching the matrix phase with nitric acid to produce separate fibers. Douglass fails to teach the use of melting and cooling a mixture of niobium and copper for obtaining the bulk matrix containing a fiber phase.

However, Verhoeven et al (col. 3, lines 4+) teach the use of melting a mixture of niobium of at least 15 weight percent and copper in yttria or thoria crucible under an inert atmosphere to about 1850° to 1880° C for 5 to 15 minutes and chill casting by pouring the melt into a water cooled mold so that the casting freezes from one end for the purpose of effectively forming a ductile composite containing the fiber phase consisting of discrete, randomly distributed and oriented dendritic-shaped niobium particles in the copper matrix. It would have been obvious to one having ordinary skill in the art to provide Douglass the use melting a mixture of niobium of at least 15 weight percent and copper as taught by Verhoeven et al in order effectively control the fiber shape with high ratio of surface to weight in the produced fibers.

6. Claims 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Douglass in view of Verhoeven et al and further in view of Kim et al.

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Douglass in view of Verhoeven et al fails to teach the use of eutectic mixture. However, Kim et al (col.3, lines 3+) teach the use of eutectic temperature (col. 7, lines 30+), mixing pure Nb and bulk metallic glass and arc melting the mixture for the purpose of producing a two-phase microstructure containing intermetallic Nb fiber phase (dendrites) in an amorphous matrix. It would have been obvious to one having ordinary skill in the art to provide Douglass in view of Verhoeven et al the use of eutectic mixture as taught by Kim et al in order effectively control the microstructure of the niobium fiber.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Douglass in view of Verhoeven et al and further in view of Imaizumi et al.

Douglass in view of Verhoeven et al fails to teach the use of C-103 as the fiber metal. However, Imaizumi et al teach the use of C-103 (niobium (Nb) based alloy containing Hf and Ti) for the purpose of increasing superconductive properties for the niobium fiber. It would have been obvious to one having ordinary skill in the art to provide Douglass in view of Verhoeven et al the use of C-103 (niobium (Nb) based alloy containing Hf and Ti) as taught by in order effectively increase superconductive properties of the niobium fiber.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (8:00-5:30) Second Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I-H Lin

I.-H. Lin

6-29-04

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